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KITCHEN GARDEN ESCULENTS OF AMERICAN ORIGIN.

I.

BY E. LEWIS STURTEVANT, M.D.

IN our leading seed catalogues some seventy-two species of plants are usually grouped under kitchen garden esculents. Of these we believe seventeen to be of American origin, the purslane doubtful, and chives to belong to both the old and the new world. Excluding these nineteen, De Candolle assigns, of the remainder, twenty-four to Europe, fifteen to Asia, four to Africa, one to Australasia and nine not mentioned. Of this list many have both European and Asiatic habitat, or other habitat as well as the one under which tabulated. If we compare the importance of the old and new world vegetables, we find it difficult to decide. Certainly the old world cabbage, in its numerous races, is of importance in the garden, but so is the new world potato. What can be decided, however, is that the peppers, pumpkin and squash, tomato, sweet corn and sweet potato are representatives of a culture which antedated their introduction into the gardens of Europeans, and must have been derived through a cultivation as careful as was required for the equal development of similar vegetables of old world origin. To expect to find the original of our longest cultivated vegetable products, as wheat or maize, in a plant that can now be recognized as a wheat or a maize, seems unphilosophical, as evolution must have long since produced changes during that long series of selections that have resulted not alone in producing varieties, but even races which deserve specific discrimination. On account of the light thrown upon an ancient civilization by the knowledge of the cultivated plants it has produced, I have thought fit to bring together a selection from my notes relating to the esculents of American origin which are now to be generally found in our vegetable gardens.

Alkekengi.—The alkekengi, or more usually called strawberry tomato in our seed catalogues, is *Physalis pubescens* L., an American plant which furnishes one of our minor vegetable products. This plant is said by Gray to be common southward and westward in the United States; and it is the *camaru* of Brazil.¹ It is

¹ Masters. Treas. of Bot.

described by Parkinson¹ under the name of *Halicacabum f. alk. virginense*, and by Feuille² under the name of *Alkekengi virginianum fructu luteo*,³ these names indicating its American origin. *P. peruviana* Hort., the *alkekengi* of Peru or *Capuli*, is cultivated in French gardens, but it differs but slightly from *P. pubescens*.⁴ Pickering⁵ says it is a native of tropical America, and has a Carib name, *sousovrov-scoroo* (Desc.), and is called in Tagalo *potocan* (Blanco). Mueller⁶ says *P. peruviana* L., is a native of temperate and tropical America, and is now naturalized widely in many countries of the warmer zone, a perennial, but in colder climates an annual. *P. barbadensis* Jacq., is another species sometimes cultivated in France⁷ and a native of Barbadoes.⁸ *P. mexicana* Vil., probably synonymous with *P. edulis* Sims., is grown in France, and the seed sold under the name of petite tomate du Mexique, according to Vilmorin (l. c.), but as grown at the New York Agricultural Experiment Station, it appears to answer to the description of *P. angulata* L. (var. ? *philadelphica* Gray ?), but the fruit larger than in the description. If this supposition be correct it was mentioned by Camerarius in 1588, Parkinson 1640, etc. Sloane mentions its occurrence in Jamaica.⁹ Pickering¹⁰ says it is a native of tropical America, but it seems to have a Malabar name, *inota inodien* (Rheede), Burmese *pungben* (Mason), Ylocano *tuttullacac* (Blanco), on Tahiti *tamani* (Bertero), on the Hawaiian islands *kamani*. Mueller¹¹ says it occurs in many tropical countries, extending as a native plant to the northern part of the United States and to Japan.

The old world *alkekengi* is *P. alkekengi* L., well known to the ancients, and described by Dioscorides. It does not now seem to be cultivated as a kitchen garden plant, having been superseded by the American species.

The fruit of the strawberry tomato is much esteemed by some

¹ Theatrum Botanicum, 1640, 462.

² Obs. faites sur les cotes orientales de l'Amerique meridionale, Paris, 1714-25.

³ Miller's Dict.

⁴ Vilmorin. Les Pl. Pot., p. 4.

⁵ Chron. Hist. of Pl., 755.

⁶ Select Plants, p. 165.

⁷ Vilmorin. l. c.

⁸ Miller's Dict.

⁹ Lunan. Hort. Jam., II, 303.

¹⁰ l. c., 429.

¹¹ l. c., 165.

people in a raw state or in preserves, and is disliked by others. It has a sweet acidulous taste with a pronounced flavor, considered by some as agreeable, by others as nauseous. It was not known in French kitchen garden culture in 1829 (not being mentioned in L'Hort. Francais, 1824-5, Nouv. Dict. du Jard., 1826, nor by Noisette, Man. du Jard., 1829), nor was the seed in the catalogue of Thorburn in 1828, which would indicate that it was not then in American gardens. *P. alkekengi*, according to Loudon,¹ was cultivated in most gardens in England till in the last century, and he says several other hardy species, including *P. pubescens*, also produce edible fruit. Alkekengi is described in several varieties or species by Burr in his American "Garden Vegetables," edition of 1863, but I have no opportunities of library conveniences to establish when our species first appeared in kitchen garden culture.

Bean: Kidney.—We have few vegetables as difficult to trace historically as the common bean (*Phaseolus vulgaris* Savi.), on account of the confusion which exists not only in the vernacular names customarily applied to this group of the Leguminosæ by common people, but also on account of the likeness which appears to exist between *beans* of various botanical genera. In a finely arranged museum collection of substances used in the arts, and arranged by a gentleman of unusual scientific attainments, I very recently was much surprised to recognize the *Soja* bean under the name "Beans from Japan," and also to recognize a variety of *Dolichos* under a similar mislabeling. The bean serves as a food, and is carried as provision from place to place without destruction of its value as a seed, and hence we should expect a more rapid and less recorded introduction to a new locality than is generally the case with a desirable vegetable, and this quick distribution is illustrated by the mention, by Josselyn, one of the early writers of New England, of the "American beans" of many kinds, and also Bonivis, Calavances and the "*kidney-bean that is proper to Roanoke*," and he adds: "But these are brought into the country; the others are natural to the climate."²

In De Candolle's writings upon geographical botany, he seems to ignore authors who might be quoted to fortify an opinion upon the American origin of plants, as his references show dependence

¹ Hort. Lond., 1860, p. 582.

² Josselyn's Voyages, pp. 73-74.

more upon botanical writers than upon mention by voyagers and historians. If we peruse the early accounts of American discovery, we find beans mentioned as of almost universal occurrence among the native tribes, but what bean was meant must be inferred from other data. In the north-eastern portion of America it is probable that such mention is of *Phaseolus vulgaris*; in the central portion, of this and some species of the *Dolichos*; further south, the *Dolichos* and lima are perhaps often included; in the south-west, the mesquit bean. All these sorts, whichever genus was intended, served as food for the traveler, and were doubtless, all but the mesquit, secured as provision by the many exploring vessels victualled in those times from the productions of the countries visited.

We have absolutely no certain information which leads us to suppose that *Phaseolus vulgaris* existed in the old world before the discovery of America. The only evidence we find is the early use of the word "kidney-bean" by voyagers, as when Columbus, in 1502, found "red and white beans, resembling the kidney-beans of Spain,"¹ but this is in a translation; or when Strachey says the beans of Virginia "are the same which the Turks call garvances;"² but Strachey was in Virginia in 1610, and before this the kidney-bean seems well known in Southern Europe. There is no certainty that it was known to the ancient Greeks and Romans. According to De Candolle³ this bean is not among the numerous seeds that have been unearthed from the ruins of ancient Troy, nor has it been found in the lacustrine débris of the lakes of Switzerland, Savoy, Austria and Italy. There is no proof that it existed in ancient Egypt. It is not mentioned by ancient Chinese authors.⁴ The authors of the fifteenth century, such as Crescenzo and Macer Floridus, do not speak of it. The authors of the sixteenth century, after the discovery of America, all publish figures and descriptions of *P. vulgaris* with an infinity of varieties.⁵ Kidney-beans are stated to have been introduced into England in 1597, some say imported from the Netherlands as early as 1509.⁶ *French beans* are, how-

¹ Knox. Coll. of Voy., 1767, I, 147.

² Strachey's Virginia. Hak. Soc. ed., 117.

³ Origine des Plantes Cultivées, 272.

⁴ Bretschneider. On the study and value of Chinese botanical works, &c.

⁵ De Candolle, l. c., 272.

⁶ W. S. Booth, Treas. of Bot.

ever, mentioned by Barnaby Googe in 1572,¹ which name indicates their previous introduction into France. In 1640 Parkinson² says in his quaint form: "There hath come likewise unto us and others both from Africa, Brasill, the East and West Indies, Virginia, &c., sundry other sorts and varieties which were endless to recite, or at least useless, but onely to behold and contemplate the wonderfull works of the Creator in those his creatures." The mention of a *Faseolus* by Albert le Grand, which De Candolle takes to be a dwarf bean, may well apply to some species of *Dolichos*, probably *D. unguiculatus* L. There is no indication of an early introduction into India, as De Candolle remarks,³ and Walter Elliot⁴ says that *P. vulgaris* is not an article of field produce in Southern India nor of general use among the natives, its culture being confined to gardens near European settlements.

The evidence for the antiquity of the bean in America is both circumstantial and direct. The number of names given in the northern parts of America alone indicate an antiquity of culture, such as *sahe* or *sahu* on the St. Lawrence (Cartier), *ogaressa* by the Hurons (Sagard), *tuppuhguam-ash*, "twiners," by the Northern Algonquins (Elliot), *a'teba'kwe* by the Abenaki of the Kennebec (Rasle), *mushaquissedes* by the Pequods (Pres. Stiles), *mal-achxil* by the Delawares (Zeisberger), *okindgier* on the Roanoke, etc.; and in these few cases, for illustration, we find no common root. The number of varieties that were grown by the Indians are also another indication of antiquity of culture, but this fact of varieties will receive illustration in our quotations from early voyagers.

John Verarzanno, in a letter written in July, 1524, says of the Indians of Norum Bega: "Their ordinairie foode is of pulse, whereof they have great store, differing in colour and taste from ours, of good and pleasant taste." Evidently this first visitor to the New England coast had never seen kidney-beans previously.⁵ In 1605 Champlain, writing of the Indians of the Kennebec region says: "With this corn they put in each hill three or four Brazilian beans (Febues du Bresil), which are of different colors. When they grow up they interlace with the corn which reaches

¹ Gard. Chron., 1864, 1181.

² Theatrum. Bot., 1058.

³ l. c., p. 272.

⁴ Bot. Soc. of Edinb., VII, 291.

⁵ Hakluyt, Divers Voyages to Am., p. 61.

to the height of from five to six feet; and they keep the ground very free from weeds."¹ In 1614 Capt. John Smith mentions "beans" among the New England Indians,² and when the Pilgrims first landed, Nov. 19, 1620, Miles Standish unearthed from a pit not only corn but "a bag of beans." Wood also mentions "Indian beans" as among the foods of the Massachusetts Indians, 1629-33.³ Lescarbot⁴ says that the Indians of Maine, 1608, like those of Virginia and Florida, plant their corn in hills, "and between the kernels of corn they plant beans marked with various colors, which are very delicate: these, because they are not so high as the corn, grow very well among it."⁵ The most complete enumeration of varieties are, however, given in Josselyn, before 1670: "French beans: or rather, American beans. The herbalists call them kidney-beans from their shape and effects: for they strengthen the kidneys. They are variegated much,—some being bigger, a great deal, than others; some white, black, red, yellow, blue, spotted: besides your Bonivis and Calavances, and the kidney-bean that is proper to Roanoke. But these are brought into the country; the others are natural to the climate."⁶

In 1535 Cartier, at the mouth of the St. Lawrence, found "beans of every color, yet differing from ours."

In 1609 Hudson, exploring the river which now bears his name, found within the limits of what is now Rensselaer county, N. Y., "beans of the last year's growth."⁷ In 1653 Van der Donck, in his Description of the Netherlands, says: "Before the arrival of the Netherlanders [1614] the Indians raised beans of various kinds and colors, but generally too coarse to be eaten green, or to be pickled, except the blue sort, which are abundant."⁸ In 1633, De Vries "proceeded in the yacht up the [Delaware] river, to procure beans from the Indians."⁹

"Beans" were seen by Newport, in 1607, in ascending the James river,¹⁰ but Heriot, in 1586, describes the *okindgier* of Vir-

¹ Champlain's Voy. Prince. Soc. ed., 64.

² The Disc. of New Eng. Peter Force Coll. of Tracts, II, 16.

³ N. E. Pros., pt. 2, ch. 6.

⁴ Hist. Nouv. France, 1612, 835.

⁵ Quoted by Gray and Trumbull, *Am. Jour. of Sc.*, Aug. 1883, p. 132.

⁶ Josselyn's Voyages, 73, 74.

⁷ N. Y. Hist. Soc. Coll. 2d ser., I, 300, 325.

⁸ Gray and Trumbull, l. c., 134.

⁹ Hazard's Annals of Pa., 31.

¹⁰ Pickering, Ch. Hist. of Pl. 575.

ginia, "called by us beans, because in greatness and partly in shape they are like to the beans in England, saving that they are flatter, of more divers colours, and some pied. The leaf also of the stem is much different."¹ In 1700-8 Lawson² says: "The kidney-beans were here before the English came, being very plentiful in Indian corn-fields. The 'bushel bean,' a spontaneous growth, very flat, white and mottled with a purple figure, was trained on poles. [This is undoubtedly the lima, as it answers to the description given to me by a very credible person who secured for me samples from a spontaneous plant in Florida, 'the trunk as large as a man's thigh, and the plant known for the past twenty-five years, some years yielding as much as fifty bushels of pods,' and the seeds smaller than the cultivated lima, very flat, white and mottled with purple.] Indian rounceval or miraculous pulse, so called from their large pods and great increase; they are very good, and so are the bonavis, calavances, nanticokes and abundance of other pulse, too tedious to mention, which we find the Indians possessed of when first we settled in America." [*Bonavis* is perhaps bonavista, a variety of bean sold by Thorburn, a New York seedsman, in 1828. The *bonavista* bean (Long) of Jamaica, is said to be *Lablab vulgaris*; *calavances* is the Barbadoes name for *Dolichos sinensis* L., as used by Long, a red bean; and *galavangher* pea is the Barbadoes name for *D. barbadensis* Mayc.] In A true declaration of Virginia, London, 1610, p. 12, "the two beanes [planted with the corn] runne upon the stalks of the wheat, as our garden pease upon stickes."

In 1528 Narvaes found beans in great plenty in Florida and westward,³ and de Vaca found beans in New Mexico or Sonora in 1535. De Soto, 1539, also found beans in abundance,⁴ and mentions that "the granaries were full of maes and small beans," but we have no clue to the species. Beans are also mentioned in Ribault's voyage, in 1562, as cultivated by the Florida Indians.

The mentions of beans in Mexico are frequent. The Olmecs raised beans before the time of the Toltecs, as Veytia informs us;⁵

¹ Pinkerton's Voy., XII, 595.

² Voyage to Carolina, pp. 76, 77.

³ Cabeza de Vaca's Relation.

⁴ A relation of the invasion and conquest of Florida (no title page).

⁵ Hist. Antiq. de Mejico, I, 154.

beans were a product of the Nahua tillage;¹ they are mentioned by Acosta;² Alarcon speaks of their culture by the Indians of the Colorado river in 1540; Alvarado of their culture by those of the valley of del Norte in 1541; and Vinegas says *kidney*-beans were grown by the Indians of the Colorado river in 1758. The native Mexican name was *ayacotle*, according to Humboldt, and Bancroft says that they were the "*etl*" of the Aztecs, when boiled in the pod *exotl*.

In November, 1492, Columbus, in Cuba, found "a sort of beans,"³ or "fields planted with faxones and habas very different from those of Spain,"⁴ and red and white beans were afterwards seen by him in Honduras,⁵ according to Pickering.⁶ Oviedo says in Nicaragua many varieties of beans are raised,⁷ and Gray and Trumbull quote Oviedo as saying that on the island and on the main many bushels are harvested every year, and in the province of Nicaragua they are indigenous, and a great number of bushels are produced yearly of these and of other *fesoles* of other sorts and different colors.⁸

The Indians of Peru, according to de Vega, had three or four kinds of beans called *purutu*.⁹ Squier found lima beans in the mummy covering of a woman from the huaca at Pachacamac, Peru;¹⁰ and Stevenson also found beans in his exploration of Peruvian tombs which antedated the conquest.¹¹ Wittmack, who studied the beans brought from Peruvian tombs by Reiss and Strobel, identified the lima beans and also three kidney-beans with *P. vulgaris purpurens* Martens, *P. vulgaris ellipticus præcox* Alefield, and *P. vulgaris ellipticus atrofuscus* Alefield.¹²

In Chili Molina says that before the country was conquered by the Spaniards, "thirteen or fourteen kinds of the bean, varying but little from the common European bean, were cultivated by the

¹ Bancroft's Native Races, II, 347.

² Hist. de las Zud. Seville, 1590.

³ Knox Coll. of Voy., I, 83.

⁴ Gray and Trumbull, l. c., 130.

⁵ F. Colomb., 28 to 90.

⁶ Chron. Hist. of Pl., 375.

⁷ Hist. Gen., I, 285.

⁸ l. c., 131.

⁹ Royal Com. Hak. Soc. ed., II, 358.

¹⁰ Peru, 78.

¹¹ Travels, I, 328.

¹² De Candolle, Origine des Pl. Cult., 278.

natives. One of these has a straight stalk, the other thirteen are climbers.”¹

In the face of this evidence, which might be even more multiplied from my notes, it seems unreasonable in De Candolle to doubt the American origin of the common kidney-bean, and his conclusion as shown by his classing “*Haricot Commun Phaseolus vulgaris*” under “*Especies d'un origine Complettement incon nue ou incertaine*” seems to show that with him more evidence is required in the case of American plants than to locate others which are of probably European or Asiatic origin.

Bean: Lima.—The lima bean is unquestionably of American origin, and De Candolle assigns its original habitat to Brazil, where the variety *macrocarpus* Benth., has been found growing wild.² Seeds have been found in the mummy graves of Peru, as by Squier³ at Pachahamac, and by Reiss and Stubel at Ancon.⁴ In Southern Florida the lima bean, the seeds, white blotched or speckled with red, is found growing spontaneously in abandoned Indian plantations, and various forms are recorded by authors under specific names as found in America and other countries, as *P. bipunctatus* Jacq., *P. inamoenus* L., *P. puberulus* Kunth., *P. saccharatus* Macf., &c.,⁵ *P. derasus* Schrank (Martens), *P. rufus*, Jacq.,⁷ etc. In the mentions of beans by voyagers this form is not discriminated from the kidney-bean, and hence we cannot offer precise statement of its occurrence from such authorities.

It is now widely distributed. It has not been found wild in Asia, nor has it any modern Indian or Sanscrit name (De Candolle); Ainslie⁸ says it was brought to India from the Mauritius, and is the *vellore* or *duffin bean* of the southern provinces. Wight says it is much cultivated, is seldom if ever found in a wild state, and the large podded sort is said to have been brought by Dr. Duffin from the Mauritius.⁹ It is not mentioned by the early

¹ Hist. of Chili, I, 91.

² Orig. des Pl. Cult., 275.

³ Peru, 78.

⁴ De Candolle, l. c., 273.

⁵ Letter of W. S. Allen, Chocaluskee.

⁶ De Candolle, l. c.

⁷ Miller's Dict.

⁸ Mat. Med., I, 28.

⁹ Icones Plant. Pl., 755.

Chinese writers,¹ but Louriero mentions it in Cochinchina in his day (1790). A dark red form came to Martens from Batavia, and an orange-red from farther India.² Schweinfurth found it in Central Africa,³ Martens⁴ received it from Sierra Leone, the form *bipunctatus* came from the Cape of Good Hope to Vienna,⁵ and Martens received it from Reunion under the name *Pois du Cap*. As Jaquin wrote in 1770 this fixes its appearance in Austria, but it only first reached England in 1779.⁶ The form *inamœnus* was considered by Linnæus to belong to Africa, but he advances, as De Candolle remarks, no evidence of this habitat, and we may remark that the slave trade may well be responsible for the transmission very quietly of South American species of food plants of convenient characters for ship use to the African coast. *P. derasus* Schrank, considered by Sprengel a variety of *P. inamœnus*, was found at Rio Janeiro.⁷

The lima bean is the scimeter podded kidney-bean and sugar bean of Barbadoes;⁸ it was mentioned in Jamaica by Lunan;⁹ it may have been "the bushel bean," "very flat, white and mottled with a purple figure," of the Carolinas in 1700-8,¹⁰ as this description applies very closely to the lima beans now spontaneous in Florida. Two varieties, the "Carolina" or sieva and the "lima," were grown in American gardens in 1806. Eight varieties, some scarcely differing, are now offered for sale by our seedsmen: Vilmorin enumerates four for France; the speckled form occurs in Brazil¹¹ and in Florida; a black form (*P. derasus*) in Brazil; the blood red in Texas;¹² the dark red with light or orange ruddy spots in the Bourbon isles (Jacquin); the black white-streaked in Cochin China (Loureiro); and the large white, small white or sieva, the red, the white striped and speckled with dark red, and the green, in our gardens. In Central Africa but two seeds are

¹ Bretschneider, On the study and value of Chinese botanical works.

² Martens, Die Gartenbohne, 96.

³ Africa, II, 254.

⁴ l. c.

⁵ Miller's Dict.

⁶ Miller's Dict.

⁷ Martens, l. c.

⁸ Schomburgh, Hist. of Barb., 605.

⁹ Hort. Jam., I, 434.

¹⁰ Lawson, Voy. to Car., 76-77.

¹¹ Martens, l. c.

¹² Martens, l. c.

ever found in a pod,¹ in our most improved varieties five or even six.

Beans: Asparagus.—The asparagus bean has its popular character indicated by its other name, yard-long, indicating the extreme length of its pods, which often attain a length of two feet. It is the *Dolichos sesquipedalis* L., and is said to be a native of the West Indies and of tropical America, and I find no mention of other origin accredited to it. It was included in American seed catalogues in 1828,² and was described as a garden plant in America by Fessenden, 1828,³ and in France by Noisette.⁴ It is said to have been first introduced into England in 1781.⁵ It may have been the "Indian rouncival, or miraculous pulse, so called from their long pods and great increase: they are very good" of Lawson, 1700–8, found on his journey to Carolina,⁶ but the species was not named by Linnæus before 1762, by Reichard before 1772, nor by Jacquin before 1770–6. No varieties are now sold by our seedsmen, nor has any but the original form been described. My notes are very deficient regarding this species.

The name of asparagus bean is probably derived from the lack of membrane, and hence tender character of the pods, which are cooked and eaten as a string bean.

Bean: Scarlet Runner.—The culture of the scarlet runner, *Phaseolus multiflorus* Lam., is very modern. In Johnson's edition of Gerarde, 1630, it is said to have been procured by Tradescant; in Ray's time, 1686, it was grown for ornament; Miller, about 1750, was the first to bring it into repute in England as a vegetable.⁷ In America it was mentioned by M'Mahon in 1806⁸ as cultivated exclusively for ornament; in 1821 it is included by Thorburn among vegetables,⁹ in 1828 the scarlet and white Dutch are both mentioned among garden vegetable seeds,¹⁰ and in 1828 or before, both varieties with white or scarlet flowers were grown in France under the name Haricot d'Espagne.¹¹

¹ Schweinfurth, l. c.

² Thorburn's Cat., 1828.

³ New American Gardener.

⁴ Man. du Jard., 1829.

⁵ Miller's Dict.

⁶ Voy. to Car., 76, 77.

⁷ Miller's Dict.

⁸ Am. Gard. Cal., 1806.

⁹ Kalendar, 1821.

¹⁰ Thorburn's Seed Cat., 1828.

¹¹ Noisette, Man. du Jard., 362.

The species is classed as American by Unger, and is described in 1635 under the name *Phaseolus puniceo flore*, by Jac. Cornuti, in his *Canadensium Plantarum Historia*, and in 1640 by Parkinson under the name of *P. flore coccineo*.¹ Four forms are described by Martens² under *Phaseolus multiflorus* Savi., two of these, the black and the white seeded, were cultivated by Titius in 1654 under the name *P. indicus flore miniato, semine negro* and *semine albo*, the names indicating a West Indian origin; one, the scarlet runner, was first mentioned by Cornuti, 1635; and the fourth, the *P. multiflorus bicolor* Arrabida, was first described in the flora of Rio Janeiro, 1827. It is now grown in gardens in Europe, and is mentioned for India by Firminger.³

But three varieties are known to our seedsmen, the scarlet runner, the seeds black mottled with dull lilac; the painted lady, the seeds brown mottled with creamy white; and the white or Dutch with white beans.

Cucumber.—One species of cucumber, *Cucumis anguria* L. (*C. echinatus* Moench., *C. angurioides* Roem., *C. sylvestris americanus*, *anguriæ folio* Pluk., &c., *C. asininus* Piso, according to Naudin) is considered to be of American origin by botanists from Tournefort down to our own day, and its habitat is given by Naudin as "Antilles, Continental Tropical and Sub-tropical America, Brazil, New Granada, South Florida." De Candolle⁴ seems to think its American origin doubtful, and is disposed to refer it to tropical Africa. Naudin, the authority on Cucurbitaceæ, refers to this species the *quarerva ova*, or *C. asininus* of Piso, 1658, found wild in Brazil; Sloane, 1707,⁵ evidently describes this or an allied species in Jamaica; Long, 1774,⁶ speaks of it as growing wild there, and it is mentioned as growing plentifully there by later writers, as Lunan⁷ and Titford.⁸ In Barbadoes it is mentioned by Hughes, 1750, under the name "wild cucumber vine."⁹

"Cucumbers" are mentioned by a few of the early writers on American affairs. They were among the plants grown by the

¹ Miller's Dict.

² Die Gartenbohnen.

³ Gard. in India, 151.

⁴ Origin of Cult. Plants, 267, 441.

⁵ Nat. Hist. of Jam., 1, 227.

⁶ Jam., 801.

⁷ Hort. Jam., 1, 254.

⁸ Hort. Bot. Am., 100.

⁹ Schomburgh, Hist. of Barb., 593.

companions of Columbus at Isabella island in 1494,¹ but these were undoubtedly from European seed. De Soto, however, found "Cucumbers better than those of Spain" in his invasion of Florida, 1539;² Cartier found "very great cucumbers" cultivated by the Indians at Montreal, 1535, the epithet *very great* indicating the European cucumber however. Perhaps the *cucumbers* cultivated by the Florida Indians, as mentioned by Ribault, 1562,³ and those seen by Captains Amidas and Barlow in Virginia, 1584,⁴ but not those seen in Virginia in 1609,⁵ were this species. "Cowcombers" were also planted on the Bermudas in 1609.⁶

The "Concombre arada" is largely cultivated in some of the West Indies, and under the name "West India gherkin" appears in the catalogues of our seedsmen. It seems to have been introduced into French garden culture by Vilmorin in 1858, but it is mentioned as grown in France by Noisette in 1829; it was cultivated in England by Miller in 1753, but probably only as a botanical curiosity. It was in American gardens, as a pickle plant, prior to 1828.⁷ The lack of its mention by early writers, and the circumstance of its being reported as wild only in the track of the slave trade, would throw doubts upon its American origin; on the other hand we seem to have fewer specific reasons for assigning its origin to Africa or elsewhere. For the present then it must be considered as an American plant.

Garlic, Leek, Onion, Chives.—Neither the leek, garlic or onion are American plants. It is curious, therefore, to observe that Cortes, on the authority of Humboldt⁸ cites onions, leeks and garlic among the edibles found on the march to Tenochtitlan. "Onyons" and "garlicke" are also mentioned by Peter Martyr,⁹ and also "Cibaioes and macoanes, like unto onions" in the West Indies.¹⁰ The "wild leekes" formerly eaten by the New England

¹ Irving's Columbus, New York, 1859, I, 380.

² Portuguese Relacion, 44, 46.

³ Hak. Soc. Vol. VII.

⁴ Smith's Virginia, 1606, Park. Voy., XIII.

⁵ A True Decl. of Va., London, 1610, p. 13.

⁶ Newes from the Barmudas, Lond., 1613, 20.

⁷ Thorburn's Cat., 1828.

⁸ Nouv. Esp., 2d ed., II, 476.

⁹ Decades, v, lib. III.

¹⁰ Eden's Hist. of Trav., 1577, 142.

natives¹ is probably *Allium canadense* L., and these are now relished by the Maine Indians. This species also furnishes food to the Indians of the Northwest,² and with *A. cernuum* formed almost the entire source of food for Marquette and his party on their journey in 1674 from Green bay to Chicago (to use modern geographical locations). This species does not, however, extend to Mexico, and we do not find mention of species native to the West Indies which would explain P. Martyr's or Cortes' mention, although *A. gracile* Ait., the Jamaica garlic, might answer for one, for these old warriors were not very choice in their application of well-known names to newly discovered plants, if there was any apparent resemblance. We may only suppose that the introduction of these vegetables from the West Indies, where brought by the Europeans, to Mexico, may have preceded the appearance of the Spaniard.

The chives (*Allium schænoprasum*) occurs in America about Lake Huron, and is also wild in Temperate and Northern Europe, Siberia and Kamschatka.³

(To be continued.)

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THE LEMUROIDEA AND THE INSECTIVORA OF THE EOCENE PERIOD OF NORTH AMERICA.

BY E. D. COPE.

TWO distinct divisions are included in this article, because the material is not yet sufficiently complete to enable me to refer certain forms to the one rather than the other. The only characters on which the osteologist can rely in endeavoring to distinguish the two groups are these: First, the terminal phalanges of the Insectivora are compressed and curved, forming claws; while those of the Lemuroidea and of most other Primates are more or less flat, and at the extremity rounded and depressed,⁴ or more or less like hoofs.⁵ Second, the hallux or inner toe of the posterior foot is opposable to the others, a character dependent on the form of the entocuneiform bone of the tarsus, which has in that

¹ Josselyn's Rarities, 84.

² R. Brown, Bot. Soc. of Ed., IX, 380.

³ De Candolle, Origin of Cult. Pl., 437.

⁴ See AMERICAN NATURALIST, April, 1885, where the Condylarthra are referred, with the Quadrumana, to the Ungulata.

⁵ The marmosets are exceptions, having true claws.